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ABSTRACT

This study investigated the stability of physical education teachers' attitudes toward four outcome goals for physical education over a 2-year period of time. The four outcome goals were physical activity and fitness, self-actualization, motor skill development, and social development. Participants for this study were 121 physical education teachers who completed the previously validated "Attitudes Toward Curriculum in Physical Education" curriculum in the spring of 1996 and in 1998. Results indicated that teachers' attitudes toward physical activity and fitness were moderately stable. The intraclass correlation coefficients between the first and second administration of the attitude instrument were .40, .41, .49, and .56 for the domain areas of self-actualization, physical activity and fitness, social development, and motor skill development, respectively, and were statistically significant. Repeated-measures ANOVA results for differences between teachers' attitudes over time showed that they were not significantly different, also supporting the stability of teachers' attitudes toward the physical education outcome goals. There were significant differences, however, by level of teaching over the 2-year period for the importance of self-actualization and social development. (Contains 37 references.) (Author/SM)

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STABILITY OF TEACHERS' ATTITUDES TOWARD CURRICULUM IN PHYSICAL EDUCATION

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Abstract

The purpose of this study was to investigate the stability of physical education teachers' attitudes toward four outcome goals for physical education over a two-year period of time. Participants were 121 physical education teachers who completed the previously validated "Attitudes Toward Curriculum in Physical Education" instrument in the spring of 1996 and 1998. The intraclass correlation coefficients between the first and second administration of the attitude instrument were .41, .40, .49 and .56 for the domain areas of physical activity and fitness, self-actualization, social development and motor skill development, respectively, and were significant ($p<.001$). Repeated measures ANOVA results for differences between teachers' attitudes over time showed that they were not significantly different, also supporting the stability of teachers' attitudes toward the physical education outcome goals. There were significant differences, however, by level of teaching over the two year period for the importance of self-actualization ($p<.001$) and social development ($p<.03$).

STABILITY OF TEACHERS' ATTITUDES TOWARD CURRICULUM IN PHYSICAL EDUCATION

Teachers develop strong belief systems that may influence their curriculum, teaching and evaluation practices. Belief systems are generally stable over time and may not change even when it is logical or necessary for them to be altered. The stability of an individual's belief system is related to a variety of factors including the specificity, strength, evidential nature, and permanence of the beliefs, attitudes and values that compose the system.

Beliefs are assumptions that individuals hold to represent the truth about themselves and the world that develop from personal experiences or external authorities (Athos & Gabarro, 1978). Attitudes are formed when a group of beliefs cluster around an object or situation and are prone to action. When those beliefs serve to evaluate and call for action, values are then formed. Together, the beliefs, attitudes, and values held by individuals form their belief systems (Pajares, 1992).

The earlier a belief is added into the belief system structure, the more embedded it will be in the system, making it difficult to change. This is the reason that beliefs that have been recently acquired are the most vulnerable (Pajares, 1992). An individual's belief system about teaching and learning is well established by the time he/she gets to college. Belief systems related to teaching begin to develop from the time children start school and have been called the apprenticeship of observation (Lortie, 1975). Attitudes that have developed during the apprenticeship of observation pose a formidable challenge to teacher education programs in order to help physical education teacher education students change embedded attitudes.

Although teacher education students have previously developed belief systems about teaching and learning, it is encouraging for teacher education programs to consider that beliefs based on evidence are more likely to change when contradictory evidence becomes available. If an individual's belief system is permeable, her/his beliefs may change if they trust (or accept) new evidence that becomes available. Beliefs also can be based on faith. Beliefs grounded in faith, on the other hand, are not likely to change because the issue veridicality is not important (Sigel, 1985).

Specific beliefs are more likely to change than general attitudes. When judgements about situations or individuals increase in specificity, higher levels of instability may ensue (Midden & Verplanken, 1990). In a study of political preferences, for example, a general attitude (i.e., party affiliation), remained stable over a long period of time (i.e., 24 years). On the other hand, more specific attitudes (e.g., attitudes toward specific government policies), showed low levels of stability over the same period of time (Krosnick, 1991).

Stability also is affected by the strength of an attitude. Strong attitudes are more enduring and consequential than weak attitudes (Krosnick & Abelson, 1991). The strength of an attitude is related to the interconnections present in an individual's belief system (Pajares, 1992), the strength of the connections with related attitudes, core beliefs, and other structures in her/his belief system.

Beliefs related to educational systems (i.e., educational beliefs) usually form substructures in belief systems; in other words they become attitudes and values. Teachers' attitudes toward

various educational issues are closely related to each other and also to their core beliefs. The strength of teachers' attitudes about teaching and learning are related to the connection among the attitudes in their belief systems. Dodds and Locke (1995) found, for example, a connection among the beliefs about teaching held by preservice teachers. They did not, however, find them to be perfectly consistent or ordered in a logical manner.

Stability of attitudes relates to a state of balance. A stable attitude means that no changes will occur in the attitude over some period of time. Causes of instability of attitudes can be classified into two general categories: (a) uncertainty, and (b) systematic change. An individual that is not certain about his/her attitude may show attitudinal change over time, generally in both directions. Typically, the attitude scores will vary around an average. On the other hand, if instability is caused from systematic change, the attitudinal shift will generally develop in one direction. In addition to systematic change, events and situations also can affect the stability of attitudes. For example, in a study of the stability of attitudes of supporters and opponents of nuclear power after Chernobyl, supporters showed less stability in their attitudes (Midden & Verplanken, 1990).

Individual's attitudes can be very stable over time. Medical students' attitudes toward aging and death have shown remarkable stability (e.g., Powell, Thorson, Kara, & Uhl, 1990; Rudisill & Merriman, 1987). Mothers' child rearing attitudes also have demonstrated that they can be relatively stable over time (e.g., Katainen, Räikkönen & Keltikangas-Järvinen, 1997; McNally, Eisenburg & Harris, 1991).

Stability as well as change also has been shown in attitudes as a response to various different experiences. Student teachers frequently demonstrate both stability and change in their attitudes. Stability and change have been shown after student teachers participated in a teacher education course (Anderson & Bird, 1995). Nettle (1998) also found stability and change in student teachers attitudes' after they completed a three-week practice teaching experience. In addition, stability and change were found in middle school students' attitudes toward science after the completion a of life science course (Hill, Atwater, & Wiggins, 1995).

Attitudes also have been shown to be unstable. Variability has been observed in patients attitudes toward nursing homes as soon five months after their arrival (Groger, 1995; Rabiner & Hipskind, 1997). Instability also has been observed in children's attitudes toward reading over a three-year period (i.e., first through fourth grade) with significant reductions in attitudes toward reading over time (Kush, 1996). Attitudes may also change by design. For example, teachers' attitudes and teaching practices regarding creative dance changed after a successful in-service and follow-up program providing on-going support for teachers (Mac Donald, 1992).

Teachers' belief systems influence their curricular decisions and outcome priorities for physical education. Although the formal content for physical education usually is present in curricular guidelines, a large number of activities generally are listed without specific priorities for the curriculum (Siedentop, Doutis, Tsangaridou, Ward, & Rauschenbach, 1994; Steinhardt, 1992). Physical education specialists often are given the primary responsibility for curriculum decisions (Ennis, 1992). The rationale for his/her curriculum decisions is then embedded in the belief systems of the teacher.

Teachers' decisions related to curriculum and instruction are influenced by their value orientations. Value orientations are composed of teachers' attitudes and values toward teaching and have been characterized by the importance of critical components in the teaching-learning process to teachers (Ennis & Zhu, 1991). Along with teachers' value orientations, the context of the school also influences teachers' attitudes and instructional behaviors. Therefore, the nature of teachers' attitudes and values related to physical education and the nature of the school context influence the way the curriculum is implemented and ultimately student learning (Ennis, 1996).

There is a large body of knowledge supporting the curricular value orientations of teachers. Very little is known, however, about teachers' attitudes toward physical activity and fitness and the stability of their attitudes toward this outcome goal for physical education. Physical education's central role in the physical activity behaviors and health of our nation's youth has long been recognized and is emphasized in the Surgeon General's Report on *Physical Activity and Health* (U.S. Department of Health and Human Services [USDHHS], 1996). Schools have been identified as the only organizations capable of addressing the physical activity needs of the majority of children and youth in this country (Sallis & McKenzie, 1991). Most states have mandatory physical education (NASPE, 1997) and the majority of students attend school during the ages of 6-16 (USDHHS, 1996). Participation outside the school environment may be limited due to a variety of factors such as urbanization and financial constraints (McKenzie et al., 1995). Due to all of the factors mentioned above, national recommendations are now calling for the promotion of lifelong physical activity in youth (CDC, 1997). The purpose of this study was to investigate the stability of physical education teachers' attitudes toward physical activity and fitness, as well as toward the outcome goals of self-actualization (individual development), motor skill development, and social development over a two-year period of time. In addition, this study examined differences in teachers' attitudes over time by teaching level.

Method

Instrument

Participants completed the "Attitudes Toward Curriculum in Physical Education" instrument designed to measure the relative importance of four physical education outcome goals, in the spring of 1996 and again in the spring of 1998. The instrument includes 36 items with 9 items representing each of the four domain areas: (a) physical activity and fitness, (b) self-actualization, (c) motor skill development, and (d) social development. The physical activity and fitness domain focuses on maximizing opportunities for moderate-to-vigorous physical activity leading to physical fitness and improved health. The self-actualization domain area focuses on the development of the individual (e.g., increasing self-esteem, self-confidence, enjoyment and self-efficacy in physical activity participation). Acquiring the prerequisite motor skills necessary for successful participation in a variety of sports and activities is the focus of the motor skill development domain area. Finally, central goals of the social development domain area include developing social skills, providing equal opportunities for all students, and creating an appreciation for individuals differences among students.

An example set of questions from the instrument is available in Table 1. The instrument uses a Likert-like scale to investigate the importance of outcome goals to teachers. Participants select a number for each item that best represents their attitude toward the item from one (very

important) to five (not important). The instrument was previously validated in a three phase validation study, including: (a) a pilot test with thirty-one participants, (b) a content validity test with 28 physical education pedagogy experts, and (c) a reliability and validity test with 253 physical education teachers, also the participants for phase one of the study. The content validity results showed a mean percent agreement of the physical education pedagogy experts on all 36 items of the instrument of .91. Reliability assessment results showed a high level of inter-item agreement including Guttman-Chronbach's alpha reliability coefficients ranging from .84-.90 for the four domain areas of the instrument. The instrument demonstrated that it produced reliable and valid scores for the participants in phase one of this study (Kulinna & Silverman, 1999). A copy of the "Attitudes Toward Curriculum in Physical Education" instrument may be obtained by contacting the first author.

Participants and Data Collection

The participants for an earlier phase of the study (phase one) were 253 physical education teachers from 18 states. All of the participants were employed as physical education teachers at the elementary, middle/junior high, or high school level. Three methods of participant recruitment were used for the first phase including: (a) recruitment from local schools, (b) solicitation to members of the United States Physical Education list serve group on the Internet (USPE-L), and (c) referrals from various teacher educators across the country.

All of the participants who provided their names and addresses during phase one of the study (n=175) were asked to participate in this study. They were sent a letter explaining the follow-up study along with a packet of research materials (i.e., informed consent form, demographic information sheet, attitude instrument, and stamped return envelop). One month later a second mailing, with an updated letter and the same packet of research materials, was sent to all phase one participants that had not yet responded.

The participants for this study were physical education teachers (n=121) who participated in both phases of the study (69%). Both genders were well represented (61 female and 60 male) in the sample. There also was significant representation for all three teaching levels with 42 teachers at the elementary, 28 at the middle/junior high and 39 at the high school level (the remaining 12 taught multiple levels). Participants had between 3 and 34 years of teaching experience (M= 16 years).

Data Analysis

Data were scored by creating measures for the physical activity and fitness, self-actualization, motor skill development and social development domains of the instrument. The internal consistencies of the measures were estimated for the follow-up test administration using Chronbach's alpha. Reliability coefficients were calculated for each of the four domain areas.

Analysis of variance (ANOVA) was used (participant x trial) to calculate intraclass correlation coefficients for each of the four domain areas to determine the reliability (stability) of teachers' attitudes toward the four outcome goals for physical education. A two-way repeated measures ANOVA (teaching level x time) was used to determine if significant changes had

occurred in teachers' attitudes toward the four outcome goals by level of teaching over the two-year period. Tukey post hoc tests also were used to test for significant differences. In addition, descriptive statistics were calculated for all participants across teaching level, time, and the interaction of time with teaching level.

Results

The internal consistency of the scores in each of the four domain areas remained high over the two-year period of time. Cronbach's alpha results for the four domains areas were as follows: physical activity and fitness .89 and .91, self-actualization .81 and .90, motor skill development .85 and .88 and social development .86 and .89, for phase one and the two-year follow-up instrument administration, respectively.

The intraclass correlation coefficients between the first and second administration of the attitude instrument were .40, .41, .49 and .56 for the domain areas of self-actualization, physical activity and fitness, social development and motor skill development, respectively. The correlations between teachers' attitudes toward various physical education outcome goals (domain areas) from the first to the second administration of the instrument (two-year time span) were significant ($p<.001$). When considering the magnitude of the intraclass correlation coefficients as well as the significance level, these results suggest that teachers' attitudes toward physical education outcome goals are moderately stable.

The rank order of outcome priorities for physical education also was stable for teachers in this study. Teachers selected physical activity and fitness as the most important outcome goal for physical education ($M1=16.36$, $SD1=5.09$; $M2=16.68$, $SD2=6.05$), followed by self-actualization ($M1=16.97$, $SD1=4.45$; $M2=17.93$, $SD2=5.52$), motor skill development ($M1=19.36$, $SD1=4.99$; $M2=20.06$, $SD2=5.73$) and social development ($M1=20.27$, $SD1=5.27$; $M2=20.80$, $SD2=5.96$), respectively, in both administrations of the instrument. The means for each of the domain areas over time (2 years) are depicted in Figure 1 (with lower values representing higher attitudes).

Repeated measures ANOVA results indicated that the differences between teachers' attitudes from the first to the second administration of the instrument were not significantly different for the four domain areas, also supporting the stability of teachers' attitudes toward the physical education outcome goals. Significant differences were found, however, for the teaching level (elementary, middle, high) by time interaction for the importance of self-actualization ($F(2, 98) = 7.54$, $p<.001$) and social development ($F(2, 98) = 3.66$, $p<.03$). Tukey post hoc tests indicated that significant differences were present between the two administrations of the instrument for teachers at the high school and elementary levels. High school teachers' attitudes toward the domain areas of self-actualization and social development were significantly lower at the follow-up. Conversely, elementary school teachers' attitudes toward the self-actualization and social development domain areas were higher at the two-year follow-up. Differences by level over time are presented in Figure 2.

Discussion

The results of this study demonstrated that the importance of four outcome goals for physical education to teachers (i.e., physical activity and fitness, self-actualization, motor skill development, and social development) remained moderately stable over time. These findings support the theory that belief systems are generally stable (Pajares, 1992). The stability of teachers' attitudes in this study may be attributed to the strength of the attitudes. Attitudes toward teaching develop strong connections with core beliefs and other attitudes (Pajares, 1992). It also may be related to the nature of the attitude instrument. Questions on the "Attitudes Toward Curriculum in Physical Education" instrument (Kulinna & Silverman, 1999) are related to general attitudes (e.g., How important is the outcome of improved levels of health and fitness in students?) rather than beliefs specific to individual teaching situations. General attitudes are more enduring than specific beliefs (Midden & Verplanken, 1990).

This study also provides some insight into teachers' outcome priorities for physical education and the stability of those priorities over time. The relatively priority of the four outcome goals to teachers also remained stable over the course of two years. Physical activity and fitness was selected as the most important outcome goal for physical education, followed by self-actualization, motor skill development, and social development, respectively, in both administrations of the instrument (Kulinna & Silverman, 1999). The priority placed on physical activity leading to the development of fitness by the teachers in this study is consistent with national recommendations for physical education programs (ACSM, 1988; CDC, 1997; USDHHS, 1980, 1991).

Although overall attitudes toward the outcome goals were moderately stable over time, there were some changes found over time by teaching level. Differences were found over time in high school and elementary school teachers' attitudes toward the outcome goals of self-actualization and social development. Elementary teachers' attitudes toward these two outcome goals increased over time while the high school teachers' attitudes showed a concomitant decrease. A significant difference between the elementary teachers and the high school teachers' attitudes toward the outcome goal of social development also was observed in the first administration of the instrument. Although a significant difference was not found between these two groups of teachers' attitudes for the domain area of self-actualization in phase one, it was the domain area given the highest rating by elementary teachers in both administrations of the instrument.

Differences observed in outcome priorities between elementary and high school teachers over time may be related to curricular differences in their programs. The developmental curricular model is commonly used by elementary teachers, where the focus is on development or the self-actualization of students (Jewett, Bain, & Ennis, 1995). At the high school level, the curriculum is often comprised of a variety of activities and geared toward sports (O'Sullivan, Siedentop, & Tannehill, 1994).

The results of this study demonstrate the importance of physical activity leading the development of physical fitness to teachers. This study also shows that teachers' attitudes toward physical activity and fitness are moderately stable. Understanding more about teachers' attitudes

and the stability of their attitudes improves our theoretical understanding of teaching, as well as provides information for teacher educators and administrators to consider as they plan preservice and inservice programs. This study also increases our awareness of the current role physical activity leading to the development of fitness plays in school physical education programs.

Since it has been demonstrated that teachers' belief systems can influence their instructional behaviors (Rauschenbach, 1993; Thousand & Burchard, 1990), further study is needed to understand how the outcome goal of physical activity and fitness, as well as the outcome goals of self-actualization, motor skill development and social development, are reflected in teaching behaviors. Furthermore, additional research also is needed related to teachers' attitudes toward physical activity and fitness, as well as their content knowledge and pedagogical content knowledge in this area.

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Table 1

Example Set of Items from the Attitudes Toward Curriculum in Physical Education Instrument

How important are the following objectives for physical education classes?	
	1=Extremely Important 5= Not Important
Providing large amounts of activity time for students to practice motor skills	1 2 3 4 5
Providing large amounts of activity time for students to work together in groups solving problems	1 2 3 4 5
Providing large amounts of activity time for students to work on their own gaining confidence in their movement abilities	1 2 3 4 5
Providing large amounts of activity time for participation in activities leading to the development of physical fitness in students	1 2 3 4 5

Figure 1

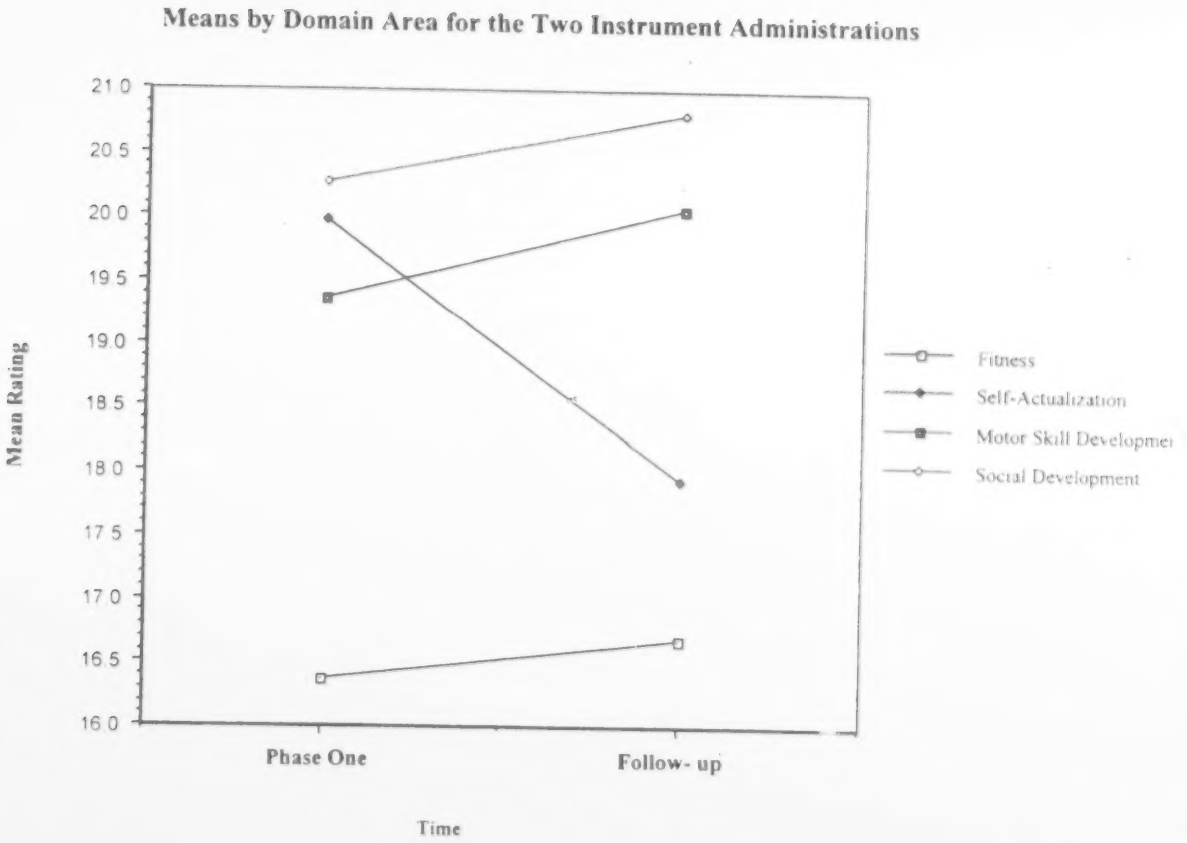

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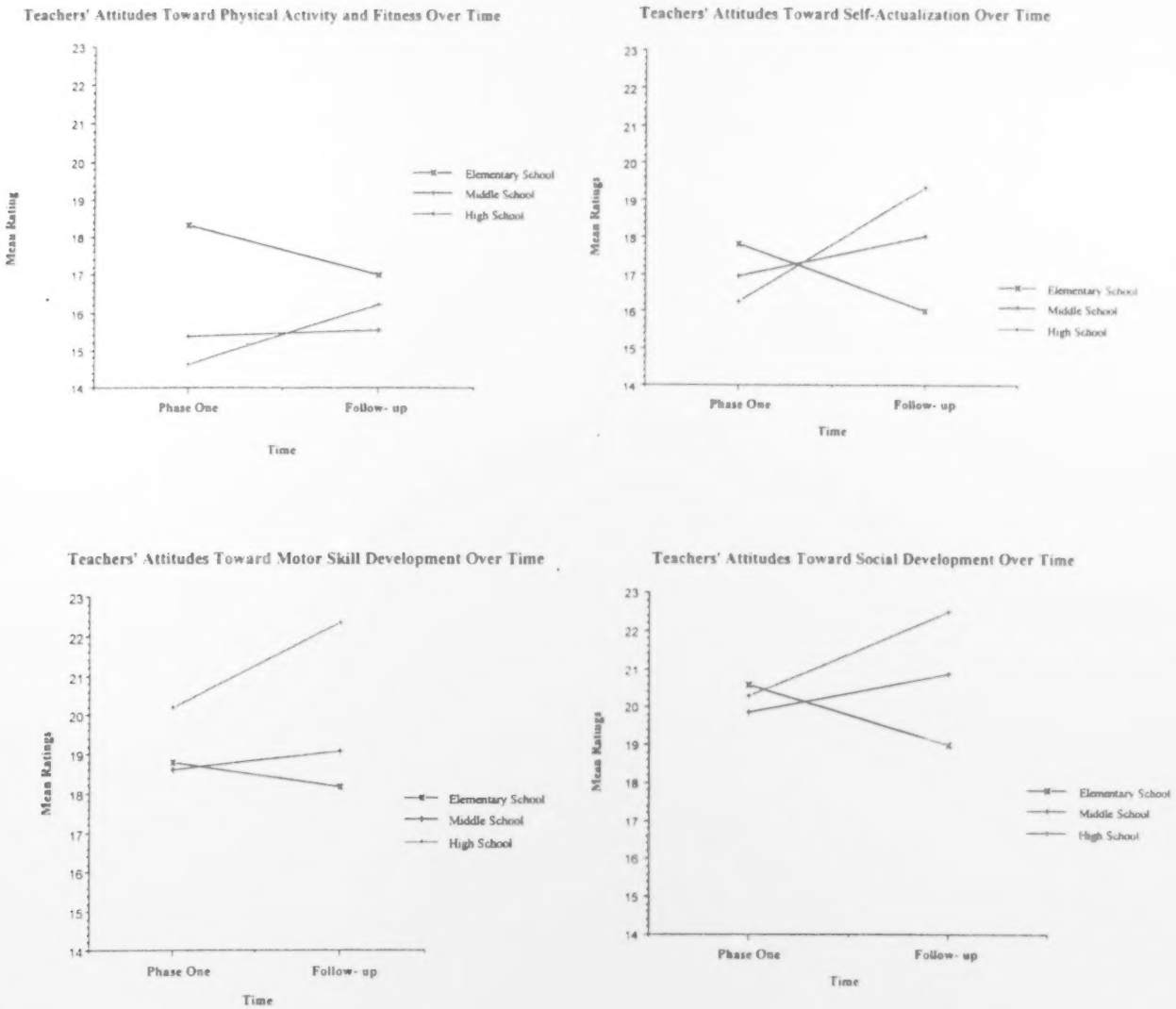
Figure 2

Means by Domain Area and Level for the Two Instrument Administrations



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